Beneficial Use of Dredged Material
Cost-Benefit Analysis

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Background

ERDC Technical Note DOER-C27

Planning Level Cost-Benefit Analysis for Physical Separation at Confined Disposal Facilities

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www.wes.army.mil/el/dots/doer

Importance of Beneficial Use

- High annual dredging volumes

Importance of Beneficial Use

- Growing shortage CDF capacity

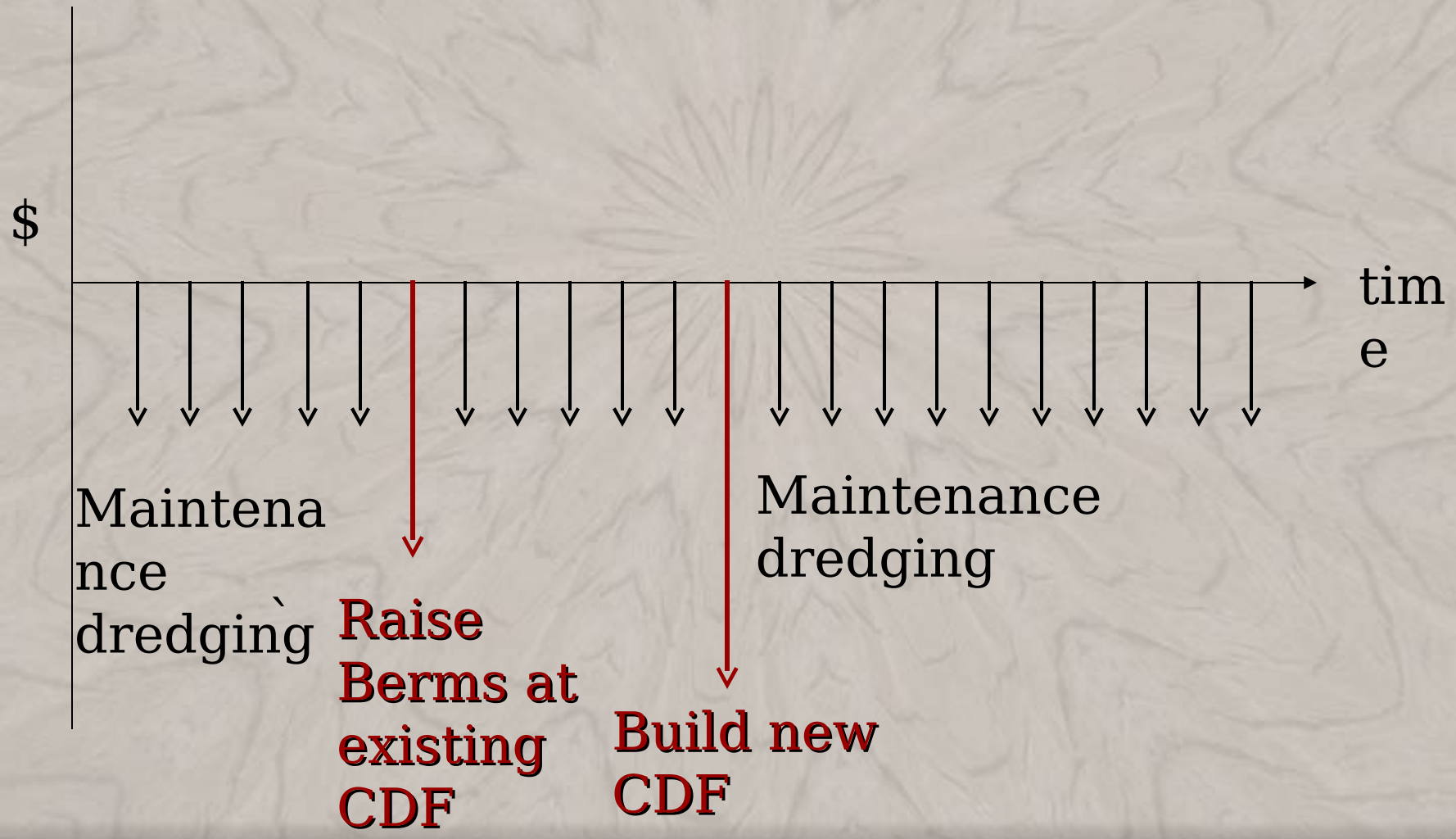
Economic Analysis Process
Identify Base Condition

- Determine period of analysis
- Define project scope
  - Expected quantity of dredging
  - Expected timing of dredging
- Define dredging & disposal alternatives
  - Such as CDF, offsite disposal, ocean disposal

Economic Analysis Process *Identify Base Condition*

- Determine Base Condition
  - From comparison of available dredging alternatives
  - ***Least cost alternative***
  - Basis for comparison of BU alternatives

Base Condition
Conceptual Example

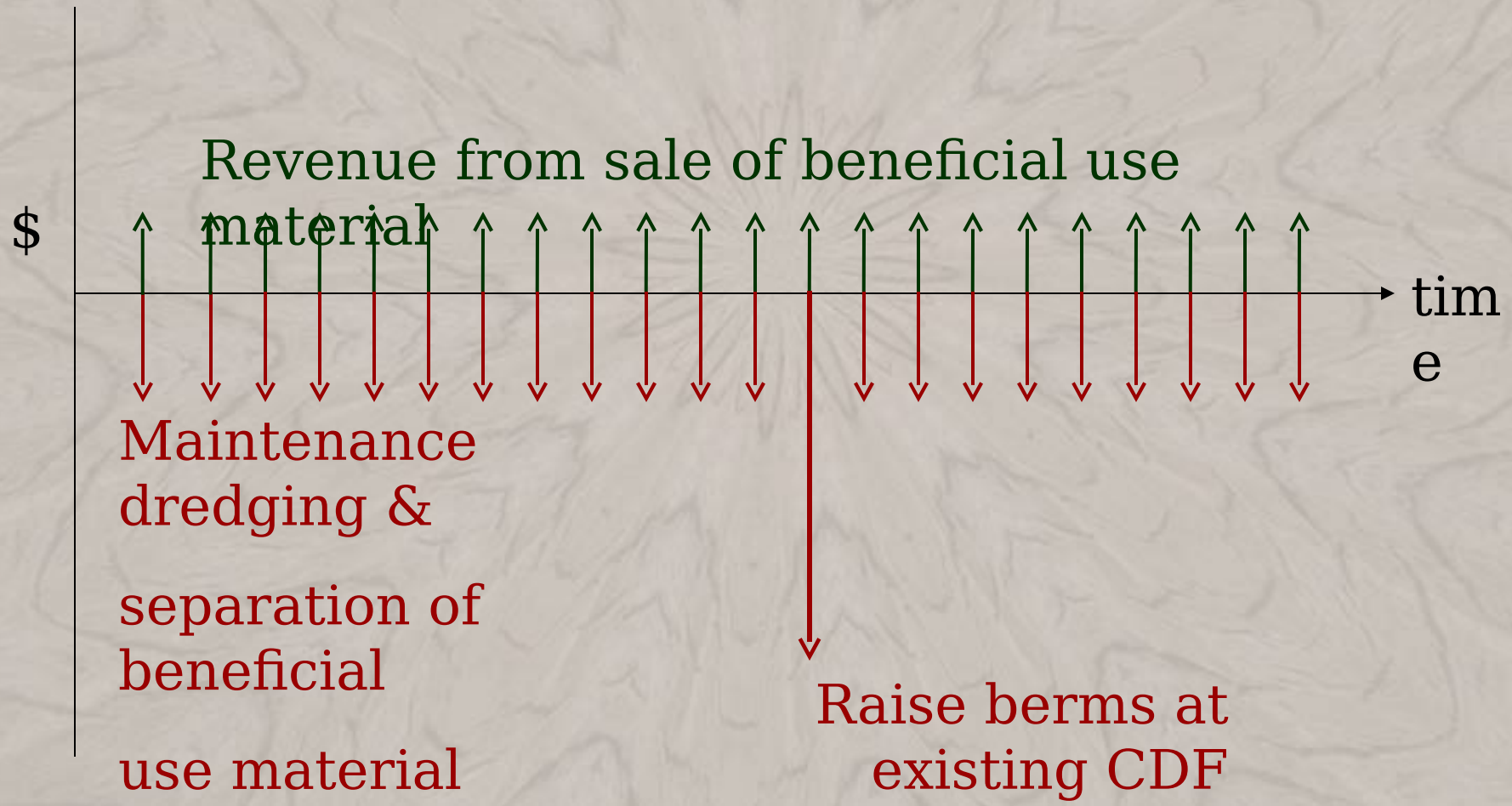


Economic Analysis Process
Formulating Physical Separation Alternatives

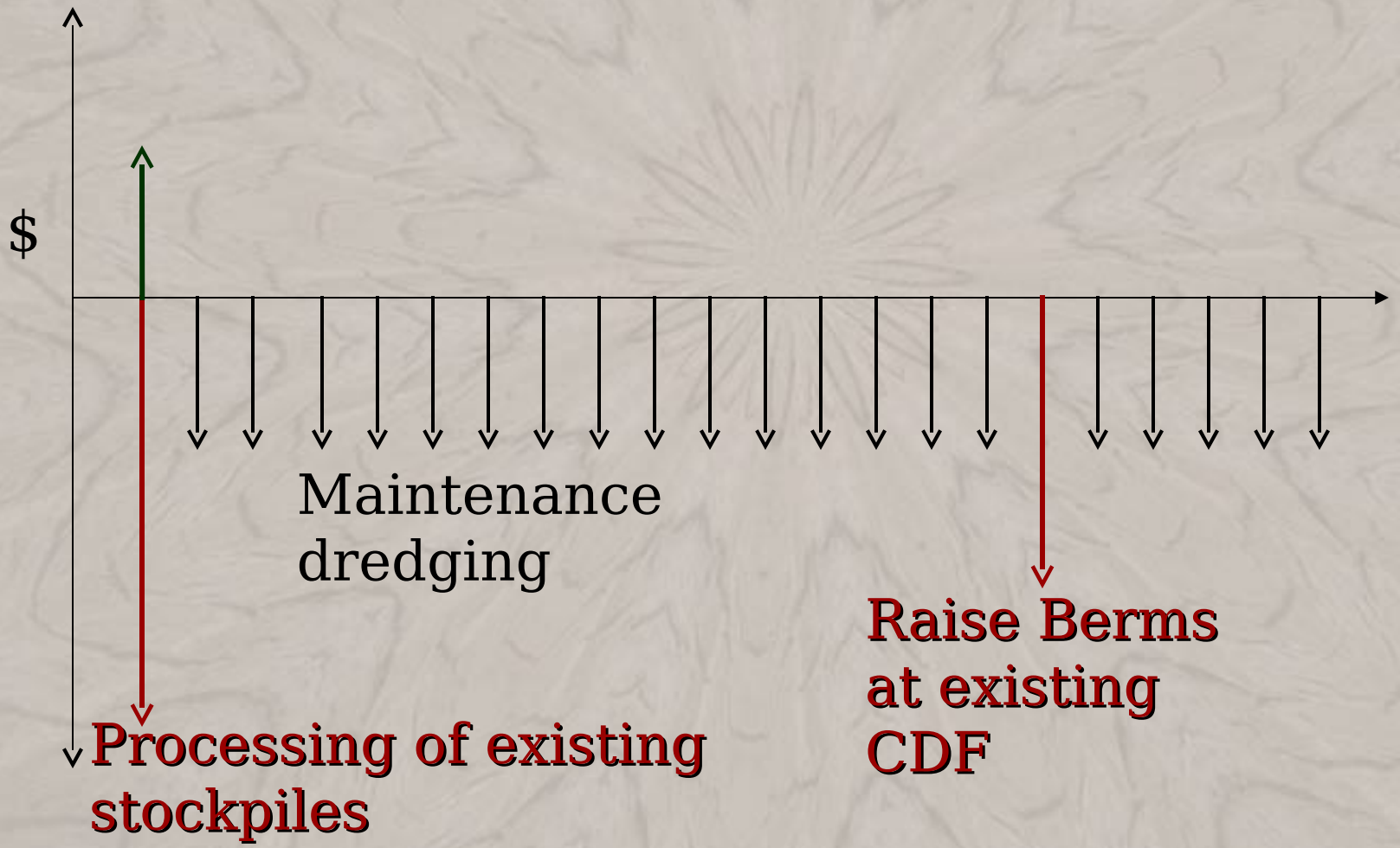
3 Separation Scenarios

1. ***Volume reduction of incoming material***
2. ***Capacity Recovery***
3. ***Capacity Recovery & volume reduction***

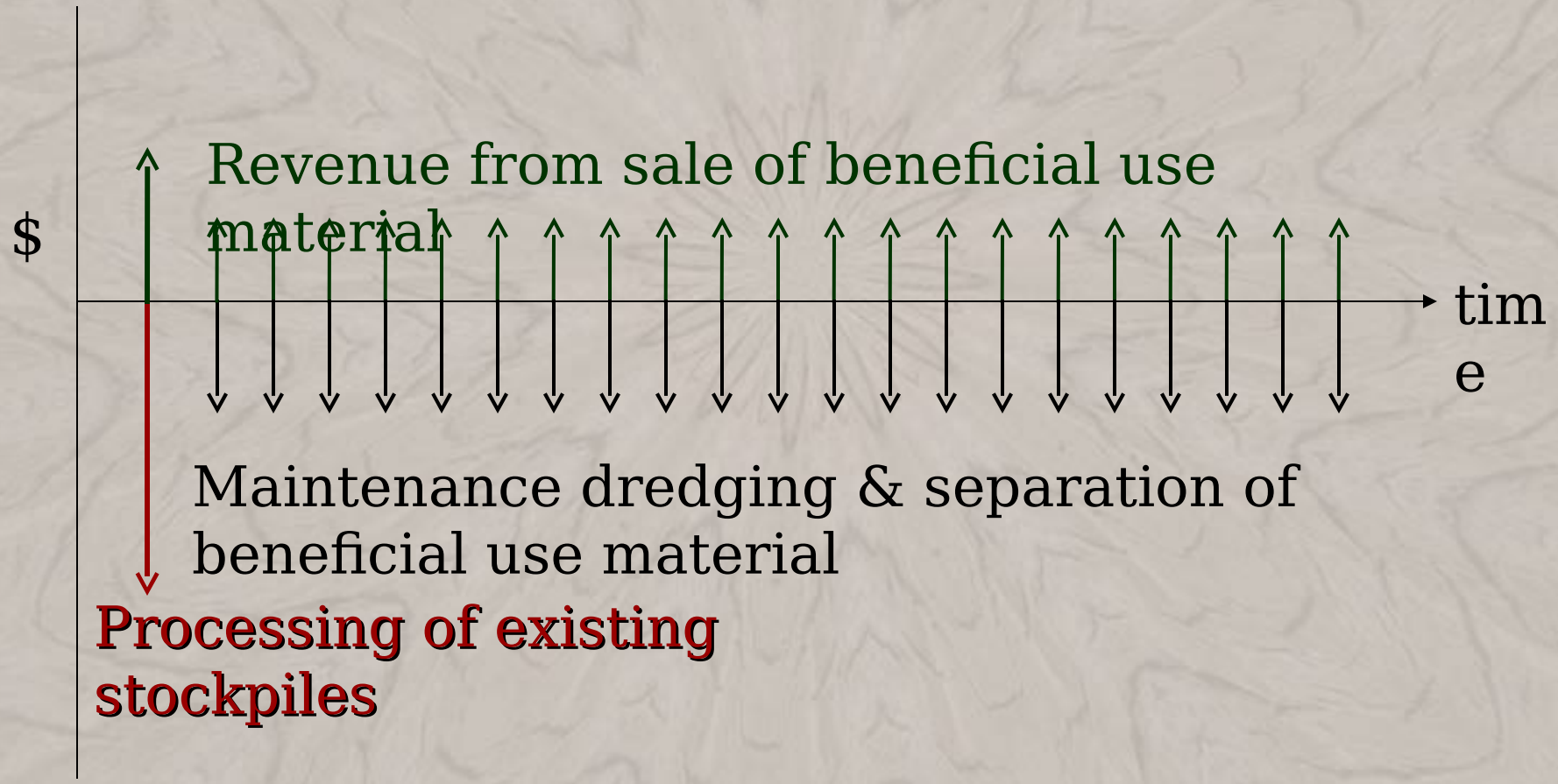
Period of Analysis
Scenario 1



Period of Analysis
Scenario 2



Period of Analysis
Scenario 3



Economic Analysis Process
Evaluating Physical Separation Alternatives

- Calculate AAEC of each alternative
- Compare each alternative to Base Condition

Economic Analysis Process
Evaluating Physical Separation Alternatives

- Net Remaining Benefits:

  [AAEC (Base Condition)]-[AAEC (BU Alternative)]

- Benefit Cost Ratio:

  AAEC (Base Condition)

  AAEC (BU Alternative)

- Economic efficiency requires positive net benefits